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REPORT

ON

PROGRESS IN MEDICINE

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PROGRESS IN MEDICINE.

In preparing this report I have had in mind the words of a distinguished physician, recently deceased (Dr. Walter Moxon): "Why can not we combine against the continual heaping up of unverified heresay? Ingenious men, with large memories, connect together various well-meant quotations, until some far-away propositions, uncertainly drawn from uncertain sources, go for the progress of medicine."

While it can not be rightly claimed that any "epoch making" discoveries have been made in practical medicine, during the year since we last met, yet the record will show much activity, and no halting in the onward march of the medical art.

BACTERIOLOGY.

Bacteriology continues to be widely studied, and the characteristics of the various septic and pathogenic microbes are be-

coming more widely known. Bacterial pathology dominates all teaching at the present time. I shall not attempt even a cursory review of this subject, but with a brief reference to some recent views will dismiss this part of my subject:

Croupous pneumonia is very generally held to be an acute, specific fever, dependant on a micro-organism. The so-called pneumo-coccus of Friedlander has received a large share of attention, an interesting point being the discovery by Frankel of the same microbe in cerebro-spinal-meningitis, which certainly is closely related etiologically to pneumonia. Weichelbaum has differentiated the varieties of microbes in the several kinds of pneumonia. The most that can be claimed in this matter is that it is still *sub judice.*

Wyskowitch and Orth have contributed an important fact to the etiology of endocarditis, by producing the disease by introducing streptococci into the circulation of animals whose valves had been injured. Dr. Shakespeare, of Philadelphia, commissioned by the President of the United

States to investigate cholera in Europe and India, has submitted his report. In the main he is in accord with the views of the German and Belgian commissioners. He regards Koch's comma baccillus of the greatest diagnostic value of true cholera. He has less positive opinions as to its pathogenic properties; while it is probably the active cause of cholera, Dr. S. thinks the proof is not yet absolutely convincing. Dr. D. D. Cunningham, of India, and Klein, of England, have retracted to a certain extent their former statements, and accept the claims of Koch as to the diagnostic value of the comma bacillus. The Joint Commission of the Royal Society, the University of Cambridge, and the Association for the Promotion of Scientific Research, has recently published their preliminary report. They reject the claims of Koch, and claim to have discovered in the intestinal mucosa, liver, and kidneys of every case examined, a fungus, consisting of granular masses, and a delicate mycelium belonging to the class chytridiaceœ.

Councilman, of Baltimore, and Osler, of

Philadelphia, have published important articles concerning the presence of peculiar micro-organisms in the blood of malarial patients. Both confirm the discovery of Lavaran, that the blood during a febrile paroxysm contains a peculiar parasitic infusiorium presenting different phases of development, sometimes existing as an actively motile flagellate organism.

Klein claims to have discovered the micrococcus of scarlet fever, and to have traced the disease to infection from cows. Numerous observers have confirmed the claims of Eberth, Koch, and Gaffky as regards the presence of a peculiar bacillus in the intestinal glands, spleen, and other organs in typhoid fever. Among bacteriologists but little doubt exists as to etiological relation of this bacillus to typhoid fever.

HEART DISEASES.

The possibilities of scientific therapeutics are nowhere more clearly apparent than in the treatment of the diseases and functional disturbances of the circulatory system. Iodides and nitrites of the greatest value in spastic and degenerative changes.

Henry Houchard, after five years experience, claims cures of angina pectoris and valvular lesions by long continued use of iodide sodium, 5 to 15 grain doses, 3 times daily, continued for 1 to 3 years, with interruptions of 6 or 8 days in each month. These agents are of value only in chronic, so-called sclerotic inflammation of the endocardium.

New cardiac tonics have appeared with almost menstrual regularity. It is to be hoped the climacteric will soon be reached. Most of them have proved to be inferior or supplemental only to digitalis. I shall call your attention to only one, which I believe is an important addition to our therapeutic resources, viz., strophanthus.

This agent is attracting a great deal of attention, and reports, so far, accord it a distinct value in organic, as well as certain functional cardiac disorders. It is more rapid and powerful in its action than digitalis, the dose smaller; it is a heart energizer, acts but slightly, and only in large doses on the blood vessels—not hæmostatic, is not cumulative, and rarely causes gastro-intesti-

nal disturbances. It lowers temperature, increases arterial pressure, and acts as a diuretic—is preferable to digitalis in cardiac dilitation, etc.

PROGNOSIS OF VALVULAR TROUBLES.

A remarkable, paper of special interest to every practicing physician, was read by Sir Andrew Clark, at the last meeting of the British Medical Association, entitled "Cases of Valvular Disease of the Heart, known to have existed over five years, without symptoms." The very title of this paper is comforting, and will attract a wide hearing.

Every physician of much experience has doubtless detected cases of valvular disease which had caused no cardiac symptoms, and had been previously unsuspected. While the conviction has been slowly forcing itself on the profession, that there was a vast distinction to be made between the pathological and clinical import of valvular murmurs, no such extensive experience has heretofore been available.

Sir Andrew Clarke has tabulated from his case-book of private practice between the

years 1873 and 1886, 684 cases of chronic valvular disease, the presence of which was not indicated by symptoms, and which did non sensibly interfere with health. He excludes from his tables all instances of mere murmurishness, all inconstant and intermittent murmurs, all which were doubtful and endocardial, all in the pulmonary and tricuspid areas, and all cases which, independently of cardiac examination, had subjective or objective symptoms of heart disease. In his elaborate tables he gives the age, sex, valve affected, character of murmur, probable cause and duration, habits, general health, etc. Of the 684 cases cited, 326 were suffering from digestive disorders, 134 had disorders of the nervous system, 61 had rheumatic affections, 47 disorders of respiratory system, 30 affections of the skin, and 23 gout, etc.

As conditions favorable to immunity from the secondary consequences of valvular trouble, he mentions "a simple, regular, occupied and moderately active life, early hours, a tranquil mind, disciplined control of the emotions and will, regular, but not

too frequent nor full supplies of fresh nourishing food, extreme moderation in the use of tea, coffee, tobacco, and alcohol, avoidance of sudden and extreme forms of exertion, of hurry and worry, of serious and depressing cares and fears."

The author lays down the following conditions, which, assuming on the part of the patient, obedience to properly adjusted rules of health, would justify us in permitting him to continue the ordinary duties and enjoyments of life, in sustaining an application for life assurance, in sanctioning marriage, and in speaking favorably of his prospects of longevity:

"*a.* Good general health. *b.* Just habits of living. *c.* No exceptional liability to rheumatic or to catarrhal affection. *d.* Origin of the valvular lesion independently of degeneration. *e.* Existence of the valvular lesion without change for over three years. *f.* Sound ventricles of moderate frequency and general regularity in action. *g.* Sound arteries with a normal amount of blood and tension in the smaller vessels. *h.* Free course of blood through the cervi-

cal veins. *i.* Freedom from pulmonary, hepatic, and renal congestion.

"The conditions of a favorable prognosis differ for different valves, and for each valve according to the character of the lesion. A comparatively small 'loading' might justify assurance in a favorable case of mitral regurgitant disease, whilst no 'loading,' however heavy, for a time however short, would warrant acceptance of a case of regurgitant disease of the aortic valves. The person with aortic might possibly live as long as the person with mitral disease; but there would be such small security for the transaction that, considering the possibilities of disaster, it could not be regarded as other than a reckless speculation."

The chief points are summed up as follows.

"1. That there are many persons with long-standing valvular disease of the heart, engaged in the active business of life, who without any symptoms of heart-disorder have enjoyed good health and have reached an advanced age.

"2. That the mitral regurgitant mur-

murs so often encountered in chorea, for the most part disappear within eight or nine years of the attack.

"3. That valvular inflammation, and their effects arising in the course of rheumatic fever, do sometimes disappear, and leave behind no clinical evidence of their former existence; and that this occurring for the most part in the young, also occurs sometimes in the middle aged.

"4. That the signs of valvular defects arising out of the degenerative changes of middle life do also, on rare occasions, disappear, and that, when circulatory and respiratory disturbances accompany their commencement, they sometimes subside, and permit of apparently complete re-adjustment.

"5. That as there must be in the histories, habits, occupations, and surroundings of patients with valvular disease conditions which, in one case, bring about secondary disorders, and, in another case, exempt it from them, it is desirable that the respective *differentiæ* should be discovered, and made capable of application to practice."

FEVER.

The commonest and most constant indication of departure from health has at all times pressed itself upon the attention of clinical observers. A subject full of interest and of important clinical bearings, it remains almost as mysterious as at the dawn of medicine.

Two scholarly and ingenious contributions on this subject have recently been published, viz.: a series of papers by Dr. T. J. Maclagan on "Pyrexia and Hyperpyrexia," and the Gullstonian Lectures "on the Nature of Fever," by Dr. D. Macalister. These gentlemen treat the subject from different standpoints, and their conclusions are not in entire accord, but they represent the outcome of physiological teaching on animal heat, and each suggests, according to their respective views, hypotheses more or less satisfactory in explanation of the nature of fever. Both start from the same premises, viz.: that fever is essentially a disorder of body heat; that in health body heat balances heat loss; hence the stability of temperature.

Dr. Maclagan includes heat among the excretory products to be eliminated from the system at the same time and manner as urea and carbonic acid. He rejects Traube's theory that fever is due to retention of heat, consequent on contraction of minute arteries. Such a condition, except in the initial stage, is inconsistent with the thermometric course of pyrexia. As a matter of fact, there is an increased elimination of heat in fever, due to heat acting as a stimulant to heat elimination. Increased formation of any product leads to stimulation and increased activity of the organ by which it is eliminated. Increased formation of heat gives rise to increased activity of the heat eliminating function of the skin. Hence before an attack of fever has lasted many hours or days, increased formation of heat is balanced by increased elimination, and no further rise of temperature occurs, though the fever process continues unabated.

Example—Typhoid Fever.—A healthy adult gives off heat enough every half hour to raise the temperature of his body 1° C. Were heat to be formed uninterrupt-

edly at this rate without elimination, the body would reach the boiling point in thirty-six hours, but owing to balance between heat production and elimination the temperature remains at 98.5° F. In fever, heat production is greatly increased. Were elimination to remain as in health there would be no limit to the febrile range of temperature. In fact, owing to increased elimination and not retention the temperature in pyrexia rarely goes above 106° F. Ord's hypothesis that in the process of tissue formation heat is rendered latent and is liberated in the febrile state is rejected as inadequate to explain the excessive heat product tion that occurs — pure hypothesis. Dr. Maclagan draws a sharp line between pyrexia and hyperpyrexia. All pyrexiæ he explains in term of metabolism by the so-called combustion theory. Regarding heat as an eliminatory product, in the specific fevers, the contagion consumes the store albumen intended for the repair of the tissues, and the water necessary for tissue metabolism, causing the tissues to consume their own substance for lack of replenish-

ment from albumen and water normally intended for them, giving rise to increased elimination of excretory products, heat, urea, CO_2. Hyperpyrexia consists in temperature running from 107° to 110° F. or higher, with coincident development of alarming nervous symptoms, usually resulting in death by coma. Examples: hysterical, heat apoplexy, and rheumatic. The combustion theory is inadequate to explain these cases. The nervous symptoms are not caused by the hyperpyrexia, but are indicative of the nervous disorder which produces the hyperpyrexia. The neurotic theory explains these cases, as well as most ephemeral fevers and fever due to non-inflammatory lesions of the nervous centers. These theories are not antagonistic. Both are necessary.

Dr. Macalister's lectures will deservedly attract wide attention. He gives us a new terminology and new conceptions, and places the pathology of fever in closer accord with modern physiological teachings. He makes no mention of the etiology of fever, nowhere refers to bacteria. He expands

the neurotic theory to cover all forms of pyrexia. This thermotaxic mechanism is the highest and most essential of all the factors concerned in the maintenance of the body heat. It is the easiest deranged, and is the connecting link of all pyrexiæ The nervous mechanism concerned in heat loss (thermolysis) is that of the vaso-motor and respiratory systems, each possessed of motor and inhibitory functions. The vaso-motor system is the great agency by which heat loss is regulated. Heat production (thermogenesis) takes place largely in the muscles, not dependent upon, but largely increased by their contraction. A nervous mechanism presides over thermogenesis similar to thermolysis. This mechanism is two-fold, one exciting thermogenesis, and accompanied by destructive metabolism; the other inhibiting thermogenesis and subserving destructive metabolism. One is catabolic, the other anabolic; one motor, the other inhibitory; one exciting muscular contraction, the other relaxing the tissues. Thermogenesis is placed in the vital scale a little higher than circulation and respira-

tion, and a little lower than voluntary muscular action. As yet there is but scant evidence of the existence of these thermal nerves.

Wood claims to have found a thermogenetic center near the crucial sulcus, and Aronsohn and Sachs find a heat-generating center near the inner side of the corpus striatum.

The thermal nervous system has three parts—thermotaxic or adjusting, thermogenetic or producing, and thermolytic or discharging. Disorder of the first (thermotaxic) implies irregularity of temperature only; of the first and second (thermotaxic and thermogenetic) implies heightened temperature and increased body heat; that is, ordinary fever. Of all three (thermotaxic, thermogenetic, and thermolytic) hyperpyrexia, dangerous increase of heat and steadily rising temperature. The three mechanisms are successively evolved as we ascend in the animal scale. Cold blooded animals have little more than a thermolytic or heat-losing mechanism. Infants have only the thermogenetic and thermolytic, there being

hardly any adjusting mechanism, as is shown by the instability of their temperature. Fever is a dissolution process. The last mechanism involved (the thermotaxic) gives way first, then the thermogenetic, and lastly the thermolytic. Conversely, when the patient convalesces, thermolysis is first restored to normal, then thermogenesis, then thermotaxy.

ANTIPYRETICS.

In regard to antipyretics, the same remarks apply as to heart tonics. I am satisfied that acetanelid, or antifebrin, as it is sometimes called, is the safest and best of the antipyretics. It is cheap, quick in action, dose small. I have seen no bad effects from it. I forbear speaking of the various febrile conditions in which it may be used, and direct your attention to its marked analgesic properties. I have used it with decided benefit in migrane, neuralgias, especially of the head and face, in the mental excitement in certain cases of hysteria at the menstrual periods, in the pains of acute rheumatism, for the atrocious pains in one case of locomotor-ataxia, etc. Gen-

erally give 5 grains in powder, capsule, or dissolved in whisky or brandy, or aromatic spirits of ammonia. The dose may be repeated in an hour or two; seldom find it necessary to give more than two doses.

PHTHISIS.

No subject in medicine has been more the sport of credulity than the treatment of consumption. The frequent non-success of scientific medicine to arrest the downward progress of this disease has given rise to a host of remedies, by "happy therapeutists, whose large promises are of value only in stimulating hope and energy in their own patients, and among too credulous doctors." Phthisis dogs the steps of man wherever he is found, and claims its victims among every age, class, and race. Cod liver oil, hyperphosphites, malt extracts, koumiss, forced feeding, compressed and rarefied air, inhalation of oxygen and nitrogen, antisepsis, cold and salt baths and douches, external applications, etc, have been launched before the profession, but the disease continues in its fitful and triumphant course undaunted and unchecked.

All so-called cures, after a brief reign have found their proper place, at best, as useful remedial agents in certain cases, under certain circumstances. Recent specifics for this disease tread upon each other's heels, so fast do they follow—all based on the view of the etiology of phthisis that has gained credence since the discovery of the tubercle bacillus. I but mention tannin, injections of eucalyptus, aniline inhalations, and hydrofluoric acid, etc., and call your attention especially to Bergeon's method by sulphuretted hydrogen enemas. As the disease has resisted so far attacks *a fronte*, we are asked to change our tactics, and attack it *a tergo*. This method was published last summer, but attracted no attention in this country, until the first of this year. The letter to the *British Medical Journal*, December 11, by Dr. J. Henry Bennett, caused certain of the profession in this country to give the method a trial. Unfortunately the method has been heralded by quacks and the public press as a certain cure. Phthisis as we ordinarily see it is a chronic process, and it is the height of absurdity to claim that any method will cure it in a few weeks. Since

the discovery of cocaine nothing has created such a *furore* in this country. Reports in this country, up to date, have been uniformly and enthusiastically favorable. I show you the apparatus and method of using it.

PERSONAL EXPERIENCE.

About the 1st of February I began using this treatment in the wards of the City Hospital under my care. For two months fifteen patients in various stages of phthisis received the treatment. I used at first Blue Lick water, then artificial sulphur water made with sulphuret of potash, and finally a saturated solution of sulphuretted hydrogen in distilled water. I found that patients bore the latter as well as the gas from weak natural waters. I noticed no special bad effects from this treatment, though the negro patients, failing to appreciate this novel method of attack, were loud in their complaints. My experience was far from encouraging, and in many respects at variance with the claims of most writers on the subject. In not a single instance could I detect the gas in the expired air, either by smell or by white filter paper moistened with solu-

tion of acetate of lead held before the mouth. Tubercle bacilli in the sputa were neither diminished nor destroyed, neither did I observe any appreciable or permanent good effect on the expectoration, temperature, or night sweats. In the face of such an overwhelming mass of favorable testimony by competent observers, I can only hope that my experience is exceptional, and that further experiment will substantiate the claims of its advocates. Safety lies midway. The positive deductions of certain writers after only a few weeks' trial of this method were ill judged and premature. Already evidence is forthcoming that the curative effects of the gas have been greatly over estimated. Its good effects are seen chiefly in asthma, bronchitis, and local pulmonary affections. Acute febrile pulmonary processes do not seem to be benefited.

A fresh series of observations by M. Perret proves that this agent is as good as, but no better than other bronchial remedies. It has no microbicidal action; it diminishes expectoration, influences nutrition for good in apyretic forms, andis of value in relieving particular symptoms.

Drs. Spillman and Parisot find it only palliative, and not curative. They find it powerless to arrest tuberculous exacerbations; much less is it capable of arresting the development of phthisis. Night sweats are not influenced, temperature is not permanently lowered, appetite not disturbed. It causes intestinal uneasiness; weight remains unchanged; general condition in this and with other medicaments was dependent upon progress of the disease. Sleep was quiet, due solely to carbonic acid.

Dupont claims better results by inhalation of carbonic acid gas.

A specific treatment for consumption is a consummation devoutly to be wished. It is clear that at present we have no therapeutic or hygienic art by which rapid phthisical processes can be surely arrested. Some cases are curable; the majority probably are not. To claim that all consumption is curable is as untrue as to say that all consumption is incurable. Cases have been cured and will continue to be cured by resources at our command. Let us give this method, irrational as it may seem, a fair trial.